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[ Title of Document ] Specification

[ Title of Invention ] Poisonous baits for controlling ants

[ Patent Claims ]

[ Claim 1 ] Poisonous baits for controlling ants characterized by containing as insecticide active ingredient 5-amin-3-cyano-1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoromethylsulfinylpyrazol

[ Detailed Explanation of the Invention ]

[0001]

[ Technical Field of Invention ]

This invention relates to poisonous baits for controlling ants.

[0002]

[ Prior arts and Problems to be solved by the Invention ]

Up to now, poisonous baits have been used for controlling cockroaches, et al. On the other hand, poisonous baits for controlling ants are also known, however, their effects are not sufficient enough. Generally speaking, since a huge number of ants are habitable in one burrow ( underground hole ), it is much more effective to destroy a whole burrow by carrying poisonous baits into a burrow rather than to kill ants one by one.

For this purpose, various characters described later are required, however, it is not yet clarified at the present time what kinds of characters are suitable as such insecticide active ingredient.

[0003]

Namely, it is impossible to destroy a whole burrow by carrying poisonous baits into a burrow as far as using insecticide active ingredient which has evasive function or those which kill ants immediately after contacting. In the other words, it was necessary to find insecticide active ingredients showing high oral toxicity against ants without evasive function and also without acute lethal effect by contacting.

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[0004]

[ Means to solve the Problems ]

To solve the above problems, this invention can supply poisonous baits for controlling ants characterized by containing as insecticide active ingredient 5-amin-3-cyano-1-(2, 6-dichlor-4-trifluoromethylphenyl)-4-trifluoromethylsulfinylpyrazole [ hitherto, this can be named as Compound (1). ] described in the Laid-opening Publication No. Sho 63-316771 .

[0005]

The poisonous baits of this invention contain usually 0.001 - 90 % (w/w) of Compound (1) as insecticide active ingredient, and base substance which can be used for usual poisonous baits as auxiliary, for example, cereal such as wheat flour, corn

flour, potato starch, etc., sugar such as granulated sugar, honey, etc., oil such as butter, peanut oil, etc., animal substance such as krill powder ( powder made of *Euphausiacea* ), pupa powder, etc., flavor such as milk, onion, etc., binding agent such as nitrocellulose, etc., solvent for moistening such as glycerin, ethylene glycol, etc., gelling agent such as gelatin, carrageenan, agar agar, etc. In addition, if necessary, it may allow to contain some other auxiliaries such as an antiseptic agent and an antioxidant.

[0006]

The poisonous baits of this invention can be prepared by mixing an insecticide active ingredient and base substance described above, and ground to form powder, or can be prepared by kneading and granulating the said powder above with adding water thereto. Furthermore, they can be prepared as in either jellied or liquid form.

Poisonous baits of this invention can be applied by placing at a habitat of ants or any places for controlling ants, alone or by packing into an appropriate container.

[0007]

The poisonous baits of this invention are effective on various ants, for example, Kuroyama ari ( *Formicia fusca japonica* ), Tobiiroshiwa ari ( *Tetramorium caespitum* ), Tobiiro keari ( *Lasius niger* ), Ishime ari ( *Monomorium pharaonis* ), Tsuyashiriage ari ( *Crematogaster sp.* ), Amime ari ( *Pristomyrmex pungens* ), Hime ari ( *Monomorium nipponense* ), Oozu ari ( *Pheidole nodus* ), Oohari ari ( *Brachyponera chinensis* ), Kuro-oo ari ( *Camponotus japonicus* ), Ruri ari ( *Iridomyrmex itoi* ), Fire ant, Carpenter ant, etc., therefore, can be used for the controlling of these various ants.

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[0008]

[ Application Examples ]

Furthermore, this invention will be explained in detail with some application examples.

Firstly, here are shown some application examples for the preparation of poisonous baits for controlling ants of this invention.

#### **Preparation Example**

The Compound (1) ( 0.01 weight parts ), wheat flour ( 30 weight parts ), pupa powder ( 20 weight parts ), peanut oil ( 10 weight parts ), granulated sugar ( 20 weight parts ) and dextrin ( 19.99 weight parts ) were mixed , kneaded with adding appropriate amount of water, granulated with pushing, dried and ground to obtain poisonous baits for controlling ants.

[0009]

Next, here are shown some test examples by using the poisonous baits of this invention. In the test examples described below, the insecticide active ingredients ( Compound A and Compound B ) used as reference for comparison are the following. Compound A: 3-methyl-1-(2,6-dichlor-4-trifluoromethylphenyl)-4-(trifluoromethylthio)pyrazole [ the compound described in the Laid-open Publication No. Sho 61-268671 ].

[0010]

#### **Test Example I**

Poisonous baits ( 50 granules ) obtained in the said preparation example

above were placed at the feeding place in the container in which *Kuroyama ari* ( *Formicia fusca japonica* ) ( 80 adults ) were transferred. After one day, the number of survived ants in the container were counted. In addition, similar test was achieved with the poisonous baits formulated with Compound A or Compound B prepared in similar manners as described in the Preparation Example said above.

The number of survived ants was zero in the test examples with the poisonous baits for controlling ants of this invention, however, it was 80 adults in test examples with Compound A or Compound B. Based on these results, it was clarified that the compounds showing evasive function such as pyrethroids are not suitable as insecticide active ingredients for the poisonous baits for controlling ants, and that Compound A or Compound B being classified in the same arylpyrazole compounds as like as Compound ( I ) are also not suitable.

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[0011]

#### **Test Example 2**

The poisonous baits ( 300 granules ) obtained in the said preparation example above were placed around a burrow of wild type of *Kuroyama ari* ( *Formicia fusca japonica* ). After placing the poisonous baits, 113 ants were observed as coming into and going out from the burrow per every 10 minutes. However, no ants were observed at all after 2 days and 7 days from the date of placing the baits.

[0012]

[ Effect of the Invention ]

The poisonous baits for controlling ants of this invention using as insecticide active ingredient 5-amin-3-cyano-1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoromethylsulfinylpyrazole show excellent effect.

[ Title of Document ] Abstract

[ Abstract ]

[ Constitution ] Poisonous baits for controlling ants containing as insecticide active ingredient 5-amin-3-cyano-1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoromethylsulfinylpyrazole

[ Effect ] The poisonous baits for controlling ants of this invention show excellent effect by destroying a whole burrow by carrying the poisonous baits into a burrow.

[ Selected Figure ] None

This patent application was translated from the original manuscript being previously received from SUMITOMO CHEMICAL INDUSTRY CO., LTD.

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